

FACT SHEET

as required by LAC 33:IX.3111, for draft Louisiana Pollutant Discharge Elimination System Permit No. LA0036323 to discharge to waters of the State of Louisiana as per LAC 33:IX.2311.

The permitting authority for the Louisiana Pollutant Discharge Elimination System (LPDES) is:

Louisiana Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, Louisiana 70821-4313

- I. **THE APPLICANT IS:** City of Ruston
Northside Wastewater Treatment Plant
P. O. Box 2069
Ruston, LA 71273
- II. **PREPARED BY:** Paula M. Roberts
DATE PREPARED: February 23, 2006
- III. **PERMIT ACTION:** renewal of LPDES permit LA0036323/AI 4666
LPDES application received: October 3, 2005

IV. **FACILITY INFORMATION:**

- A. The application is for the discharge of treated sanitary wastewater from an existing publicly owned treatment works serving the City of Ruston.
- B. The application does indicate the receipt of industrial wastewater. The industrial dischargers that contribute process and sanitary wastewater include:

<u>Name of Discharger</u>	<u>Flow</u>
Health South Rehabilitation Hospital and Outpatient Center	9,441 GPD
Dental Offices (13)	18,785 GPD
Car washes (5)	16,137 GPD
Davison Transport	6,336 GPD
Green Clinic and Surgical Hospital	4,421 GPD
Lincoln General Hospital and Medical Plaza	43,265 GPD
Ruston Uniform Services	1,709 GPD
Louisiana Tech University	166,095 GPD

The following facilities were listed in the Pretreatment Evaluation and Recommendation which was taken from the Manufactures Guide:

<u>Name of Discharger</u>	<u>Flow</u>
Community Care	10,833 GPD
Frosty Factory of America	8,000 GPM

- C. The facility is located at 1717 Goodwin Road; Lincoln Parish, Louisiana.
- D. The current treatment process consist of a bar screen thence mixing with activated sludge in mixing chamber. The mixed wastewater then flows into an aerated lagoon for biological treatment. Passage into the secondary sedimentation tanks and clarifier is followed by chlorination and dechlorination.

After the upgrade, the treatment process will still be an activated sludge process that includes a new headworks that will remove grit, rags, and other material from the waste stream before biological treatment. Headworks will include fine screens, induced vortex grit removal system, and free vortex system. Three aeration basins (storm holding basin, anoxic basin, and a complete mix activated sludge aeration basin) to treat 6 MGD during average daily flow conditions and 13.5 MGD during peak flows. Fine bubble diffusers

will be used in each basin. Multi-stage centrifugal blowers will also be used. Traveling bridge filter will be installed. For disinfection, a low pressure/high intensity UV system will be used.

E. Outfall 001

Discharge Location: Latitude 32° 32 ' 57" North
Longitude 92° 37' 52" West

Description: treated sanitary wastewater

Design Flow: 4 MGD (current)
6 MGD (after upgrade)

Type of Flow Measurement that the facility is currently using: Totalizing meter
Type of Flow Measurement that the facility is proposing with the upgrade: Parshall flume and continuous recorder at influent headworks and effluent discharge

V. RECEIVING WATERS:

The discharge from Outfall 001 is from an effluent pipe into Colvin Creek in segment 080606 of the Ouachita River Basin. The current and future discharge route and Outfall location will remain the same.

The **critical low flow** (7Q10) of Colvin Creek is **0 cfs**. The **harmonic mean flow** is **< 1 cfs**. For calculation purposes in the spreadsheet, 0.1 cfs is used for the critical flow, and the value of 1 cfs is used for the harmonic mean flow.

The **hardness value** of **58 mg/l CaCO₃** and the **fifteenth percentile value for TSS** is **8 mg/l**.

This information was taken from a memorandum to Paula M. Roberts from George Chike dated October 14, 2005.

The designated uses and degree of support for Segment 080606 of the Ouachita River Basin are as indicated in the table below^{1/}:

Overall Degree of Support for Segment 080606	Degree of Support of Each Use						
	Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Outstanding Natural Resource Water	Drinking Water Supply	Shell fish Propagation	Agriculture
Partial	Full	Full	Not	N/A	N/A	N/A	N/A

^{1/}The designated uses and degree of support for Segment 080606 of the Ouachita River Basin are as indicated in LAC 33:IX.1123.C.3, Table (3) and the 2002 Water Quality Management Plan, Volume 5, Part B, Water Quality Inventory respectively.

Subsegment 080606, Cypress Creek-Headwaters To Bayou D'Arbonne (includes Colvin Creek), is listed on LDEQs Final 2004 Integrated Report as impaired for TDS and Sulfates with a Category 3 listing which means there is insufficient data to determine if any uses and standards are being attained. A Use Attainability Analysis (UAA) will need to be done, but has not been completed at this time. These two parameters were not listed previously on the 303(d) list. To date no TMDLs have been established for this waterbody to address TDS and Sulfates. Therefore, TDS and Sulfates will be addressed in this permit. A reopener clause will be placed in the permit to allow for the requirement of more stringent effluent limitations and requirements as imposed by any future TMDLs.

TDS is a measure of the amount of material dissolved in water. This material can include carbonate, bicarbonate, chloride, sulfate, phosphate, nitrate, calcium, magnesium, sodium, or organic ions and other ions. A certain level of these ions in water is necessary for aquatic life. If TDS concentrations are too high or too low, the growth of aquatic life can be limited, and death may occur.

The effluent from WWTPs adds dissolved solids to a stream. The wastewater from houses contains both suspended and dissolved solids. Most suspended solids are removed from water at the WWTP before being discharged to the stream, but WWTPs only remove some of the Total Dissolved Solids (TDS). Important components of the TDS load from WWTPs include phosphorus, nitrogen, and organic matter.

Many compounds may be found in domestic wastewaters, some organic and some inorganic. One inorganic compound that may be found in domestic wastewaters is sulfates. Sulfates can be found in almost all natural waters. They occur naturally in numerous minerals, some soils with gypsum and some shale, however, the highest levels usually occur in ground water and natural sources. The origin of most sulfate compounds is the oxidation of sulfite ores, the presence of shales, or industrial waste, principally in the chemical industry. This compound can enter a stream from erosion, weathering, through atmospheric deposition or from industrial dischargers. Sulfates are the second most abundant dissolved solids in water.

In an effort to gather information concerning the amount of organic and inorganic material being discharged from this facility, a report requirement is being imposed in the permit for the parameters TDS and Sulfates.

VI. ENDANGERED SPECIES:

The receiving waterbody, Subsegment 080606 of the Ouachita River Basin is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U. S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated October 21, 2005 from Watson (FWS) to Gautreaux (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

VII. HISTORIC SITES:

The discharge is from an existing facility location, which does not include an expansion beyond the existing perimeter. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

VIII. PUBLIC NOTICE:

The public notice is published in a local newspaper of general circulation and the Office of Environmental Services Public Notice Mailing List. Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit to the LDEQ contact person, listed below, and may request a public hearing to clarify issues involved in the permit decision. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation
Department of Environmental Quality Public Notice Mailing List
For additional information, contact:

Ms. Paula M. Roberts
Permits Division
Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, Louisiana 70821-4313

IX. PROPOSED PERMIT LIMITS:

OUTFALL 001

Interim effluent limits shall become effective on the effective date of the permit and lasting through February 29, 2008.

Interim Effluent Limits: (Design Capacity - 4 MGD)

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
CBOD ₅	334	10 mg/l	15 mg/l	City of Ruston-Northside WWTP Model on Colvin Creek (Subsegment 080606)
TSS	500	15 mg/l	23 mg/l	Since there is no numeric water quality criterion for TSS, and in accordance with the current Water Quality Management Plan, the TSS effluent limitations shall be based on a case-by-case evaluation of the treatment technology being utilized at a facility. Therefore, a Technology Based Limit has been established through Best Professional Judgment for the type of treatment technology utilized at this facility.
Ammonia-Nitrogen	133.4	4 mg/l	8 mg/l	Per EPA Region 6 Ammonia Toxicity concerns major sanitary dischargers are being limited to 4/8 at the edge of the mixing zone (letter dated January 8, 2003 from Ferguson to Levy)

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
Dissolved Oxygen	N/A	5 mg/l	N/A	City of Ruston-Northside WWTP Model on Colvin Creek (Subsegment 080606)
TDS	N/A	Report	Report	Best Professional Judgment based upon listing on LDEQ's 2004 Integrated Report dated August 17, 2005
Sulfates	N/A	Report	Report	Best Professional Judgment based upon listing on LDEQ's 2004 Integrated Report dated August 17, 2005

Final effluent limits shall become effective on March 1, 2008 and expire on the expiration date of the permit.

Final Effluent Limits: (Design Capacity - 6 MGD)

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
CBOD ₅	500	10 mg/l	15 mg/l	City of Ruston-Northside WWTP Model on Colvin Creek (Subsegment 080606)
TSS	751	15 mg/l	23 mg/l	Since there is no numeric water quality criterion for TSS, and in accordance with the current Water Quality Management Plan, the TSS effluent limitations shall be based on a case-by-case evaluation of the treatment technology being utilized at a facility. Therefore, a Technology Based Limit has been established through Best Professional Judgment for the type of treatment technology utilized at this facility.
Ammonia-Nitrogen	200.2	4 mg/l	8 mg/l	Per EPA Region 6 Ammonia Toxicity concerns major sanitary dischargers are being limited to 4/8 at the edge of the mixing zone (letter dated January 8, 2003 from Ferguson to Levy)
Dissolved Oxygen	N/A	5 mg/l	N/A	City of Ruston-Northside WWTP Model on Colvin Creek (Subsegment 080606)
TDS	N/A	Report	Report	Best Professional Judgment based upon listing on LDEQ's 2004 Integrated Report dated August 17, 2005
Sulfates	N/A	Report	Report	Best Professional Judgment based upon listing on LDEQ's 2004 Integrated Report dated August 17, 2005

Other Effluent Limitations for Outfall 001

1) Fecal Coliform

The discharge from this facility is into a water body which has a designated use of Primary Contact Recreation. According to LAC 33:IX.1113.C.5.b.i, the fecal coliform standards for this water body is 200/100 ml and 400/100 ml. Therefore, the limits of 200/100 ml (Monthly Average) and 400/100 ml (Weekly Average) are proposed as Fecal Coliform limits in the permit. These limits are being proposed through Best Professional Judgment in order to ensure that the water body standards are not exceeded, and due to the fact that existing facilities have demonstrated an ability to comply with these limitations using present available technology.

2) pH

According to LAC 33:IX.3705.A.1., POTW's must treat to at least secondary levels. Therefore, in accordance with LAC 33:IX.5905.C., the pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time.

3) Solids and Foam

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

Other Effluent Limitations

Priority Pollutants

Suspected causes of concern remaining after the elimination process are addressed in a manner consistent with the Department's permitting guidance for implementing Louisiana's surface water quality standards:

The analytical data submitted by the permittee with the application dated October 3, 2005 included these pollutants which were reviewed and resulted with these findings:

1) Zinc was tested below the required MQL of 20 ug/l and reported a value of 65 ug/l; 2) Selenium was tested below the required MQL of 5 ug/l and reported a value of 10 ug/l. Three additional samples for Selenium were submitted on December 7, 2005. All samples were reported as non detect with a laboratory detection level of 2 ug/l. The geometric mean of all four values was used in the spreadsheet.

A screen was performed for these pollutant as well as the other priority pollutants. The results and an explanation of the screening for Water Quality Based Limits are located below.

Numeric Toxic Limits: LDEQ has reviewed and evaluated the effluent analyses submitted by the permittee with the application on October 3, 2005, and December 13, 2005, and examined the following pollutants that are regulated by LAC 33:IX.1113.C.6. in accordance with the implementation procedures outlined under the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, September 27, 2001, Version 4. Please see Appendix B-1, Water Quality Screen Spreadsheet.

Pollutant	Ce ¹	Ce x 2.13 ²	Water Quality Based Limit ³	Drinking Water Source	Permit Limit ?
Total Zinc	65	138.45	239.6	-----	Yes
Total Selenium	1.778	3.787	8.37	-----	No

- 1/ Metals concentration results were presented as total metals in lab analysis submitted by the permittee. All pollutants calculated in ug/l. (**Value reported on application was input here or Geometric Mean**).
- 2/ For the reported effluent concentrations (Ce) it is estimated that 95% of the concentrations of chemicals taken over time will be 2.13 times the Ce or less.
- 3/ The water quality based limit is the maximum allowable instream concentration for that pollutant to be in compliance with water quality standards. Louisiana Water Quality Criteria for metals are hardness dependent, and expressed as dissolved metals. The water quality based limit is calculated with a conversion for metals limits expressed as total metals.

The following steps were used in evaluating the potential toxicity of the analyzed pollutants (see Appendix B-1):

- i. An evaluation of the applicability of the effluent data.

Results of the PPS were entered and compared to EPA's Minimum Quantification Levels (MQL's) to determine the potential presence of the respective toxic pollutant. Those pollutants with reported laboratory Method Detection Levels (MDL's) which exceed their respective EPA MQL's are determined to be reasonably present in the effluent and an evaluation of their potential toxicity is determined. Those pollutants with MDLs less than the MQL are determined to be not potentially present in the effluent and eliminated from further evaluation.

- ii. Calculation of permit limits based on applicable water quality standards.

Applicable water quality criteria are listed in the Appendix B-1 in Columns 12-14. These values were used to calculate the Waste Load Allocations (WLA's) for each of the toxic pollutants. The WLA is the maximum allowable concentration of a pollutant necessary to meet the respective water quality criteria. The WLAs are calculated as described in the State's Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, dated October 30, 1995, as follows (Zinc is used as the example pollutant for the following calculations):

Complete Mix Balance Model for Waste Load Allocation

- Qe = plant effluent, MGD = 4
Qr = critical flow of receiving stream, 0.1, in MGD, 0.06463
Fs = MZ, ZID flow fraction, LAC 33:IX.1115.D.7 and 8 (MZ = 1, and ZID = 0.1)
Cr = numerical criteria value from LAC 33:IX.1113, Table 1
Cu = ambient instream concentration for pollutant. In the absence of accurate supporting data, assume Cu = 0
WLA = concentration for pollutant at end-of-pipe based on aquatic life and human health numerical criteria (site specific dilution type)
LTA = long term average, units same as WLA
WQBL = effluent water quality based limit.

$$\text{Dilution factor} = \frac{Q_e}{(Q_r F_s + Q_e)}$$

$$\begin{aligned} \text{Dilution factor (acute)} &= \frac{4}{(0.1)(0.1) + 4} \\ &= 0.99 \end{aligned}$$

$$\begin{aligned} \text{Dilution factor (chronic)} &= \frac{4}{(0.1)(1) + 4} \\ &= 0.98 \end{aligned}$$

$$\text{WLA} = (\text{Cr/Dilution factor}) - (F_s Q_r C_u / Q_e)$$

iii. Conversion of dissolved metals criteria for aquatic life to total metals.

Metals criteria for aquatic life protection are based on dissolved metals concentrations and hardness values averaged from data compilations contained in the Louisiana Water Quality Data Summary. A dissolved to total metal conversion will be implemented. Hardness and TSS are a function of the conversion. This involves determining a linear partition coefficient for the metal of concern and using this to determine the fraction of metal dissolved, so that the dissolved metal ambient criteria may be translated to a total effluent limit. The average hardness value used for the analysis is **58 mg/l CaCO₃** (USGS data). The 15th percentile TSS value is **8 mg/l**. The formula for converting dissolved metals to total metals for streams and lakes are provided below.

K_p	=	Linear partition coefficient
K_{po}	=	found in Table A below
α	=	found in Table A below
TSS	=	total suspended solids concentration found in receiving stream or approximation thereof (nearest most representative site), lowest 15th percentile, units in mg/l
C_d/C_T	=	Fraction of metal dissolved
Cr	=	Dissolved criteria value for metal in water quality standards

$$K_p = K_{po} \times \text{TSS}^\alpha$$

$$\begin{aligned} \text{then, } \frac{C_d}{C_T} &= \frac{K_p}{1 + (K_p)(\text{TSS})(10^{-6})} \\ &= \frac{(1.25 \times 10^6) \times 8^{(-0.7)}}{1 + (1.25 \times 10^6)(8)(10^{-6})} \end{aligned}$$

$$\frac{C_d}{C_T} = \frac{1}{1 + (291572.81)(8)(10^{-6})}$$

$$\approx 0.301$$

therefore,

$$\text{Total Metal} = \frac{\text{Cr}}{(C_d/C_T)}$$

$$\text{Total Metal}_{\text{acute}} = \frac{72.14}{0.301} = 240$$

$$\text{Total Metal}_{\text{chronic}} = \frac{65.87}{0.301} = 219$$

TABLE A
LINEAR PARTITION COEFFICIENTS
FOR PRIORITY METALS IN STREAMS AND LAKES

(Delos et. al, 1984) (*1)

METAL	STREAMS		LAKES	
	K_{po}	α	K_{po}	α
Arsenic	0.48×10^6	-0.73	0.48×10^6	-0.73
Cadmium	4.00×10^6	-1.13	3.52×10^6	-0.92
Chromium III (*2)	3.36×10^6	-0.93	2.17×10^6	-0.27
Copper	1.04×10^6	-0.74	2.85×10^6	-0.9
Lead	2.80×10^6	-0.8	2.04×10^6	-0.53
Mercury	2.90×10^6	-1.14	1.97×10^6	-1.17
Nickel	0.49×10^6	-0.57	2.21×10^6	-0.76
Zinc	1.25×10^6	-0.7	3.34×10^6	-0.68

(*1) Delos, C. G., W. L. Richardson, J. V. DePinto, R. B. Ambrose, P. W. Rogers, K. Rygwelski, J. P. St. John, W. J. Shaughnessey, T. A. Faha, W. N. Christie. Technical Guidance for performing Waste Load Allocations, Book II: Streams and Rivers. Chapter 3: Toxic Substances, for the U. S. Environmental Protection Agency. (EPA-440/4-84-022).

(*2) Linear partition coefficients shall not apply to the Chromium VI numerical criterion. The approved analytical method for Chromium VI measures only the dissolved form. Therefore, permit limits for Chromium VI shall be expressed in the dissolved form. See 40 CFR § 122.45(c)(3).

$$WLA_{a,c,h} = (Cr/Dilution\ factor) - (FsQrCu/Qe)$$

$$WLA_{acute} = (240/0.99) - [(0.1)(0.1)(0)/4] = 242$$

$$WLA_{chronic} = (219/0.98) - [(0.1)(0.1)(0)/4] = 223.5$$

iv. Calculation of Long Term Averages (LTA's) and Permit Limits.

Comparison of the reported effluent data (converted to the 95th percentile) to the calculated effluent limitations. Long term averages are listed in the Appendix B-1 in Columns 15-17. Long term averages are calculated for each WLA (based on aquatic and human health criteria). The LTA's are calculated as follows:

$$LTA_a = WLA_a \times 0.32$$

$$LTA_c = WLA_c \times 0.53$$

$$LTA_h = WLA_h$$

$$LTA_{acute} = 242 \times 0.32 = 77.44$$

$$LTA_{chronic} = 223.5 \times 0.53 = 118.45$$

A comparison of each LTA is made and the lowest (most restrictive) is selected to calculate the effluent limitations. The most limiting LTA is listed in Appendix B-1, Column 18.

Calculation of permit limits if aquatic life LTA is more limiting:

$$\text{Daily Average} = \text{Min}(LTA_a, LTA_c) \times 1.31$$

$$\text{Daily Maximum} = \text{Min}(LTA_a, LTA_c) \times 3.11$$

$$\text{Daily Average} = 77.44 \times 1.31 = 101.4 \text{ ug/l}$$

$$\text{Daily Maximum} = 77.44 \times 3.11 = 240.8 \text{ ug/l}$$

If human health LTA is more limiting:

$$\text{Daily Average} = LTA_h$$

$$\text{Daily Maximum} = LTA_h \times 2.38$$

The resulting allowable effluent concentration is converted to a mass value using the following formula:

$$\begin{aligned} \text{lbs/day} &= (0.1014 \text{ mg/l}) \times 8.34 \times 4 \text{ MGD} \\ &= 3.38 \end{aligned}$$

Comparison of the reported effluent data (converted to 95th percentile) is made to the calculated effluent limitations. Water Quality Based limits are listed in Appendix B-1, Columns 19-22. In accordance with the State of Louisiana's implementation procedures, the reported effluent concentration is compared to the calculated daily average concentration. If the effluent concentration is greater than the calculated daily average concentration, then a reasonable potential exists and an effluent limitation for the pollutant of concern is imposed in the permit. (Please refer to Appendix B-1 for the calculated daily average concentration listed in Column 19 and the effluent concentration listed in Column 3.)

The discharge is considered to pose a reasonable potential to cause a water quality excursion if the estimated 95th percentile of a pollutant in the effluent will result in an instream waste concentration that is above the applicable State water quality criterion. The 95th percentile of possible effluent concentrations are estimated as follows:

$$C_{95} = C_{\text{mean}} * \exp(1.645 * \sigma - 0.5 * \sigma^2)$$

where: 1.645 = normal distribution factor at 95th percentile

$$\sigma^2 = \ln(CV^2 + 1)$$

$$\begin{aligned} \text{if CV is assumed} &= 0.6, \\ \sigma^2 &= .307 \end{aligned}$$

The ratio of the estimated 95th percentile value to the mean (C_{95}/C_{mean}) is calculated:

$$C_{95}/C_{\text{mean}} = 2.13$$

Based upon review of the permittee's effluent data, Total Zinc is a pollutant that is present or potentially present in the effluent discharge in such concentrations that would cause an exceedance of Louisiana's Water Quality Standards. A summary of the evaluation of the permittee's effluent analysis of the toxic pollutants is listed in Appendix B-1. As per LAC 33:IX.2709.F.1, all pollutants limited in permits shall have limitations, standards, or prohibitions expressed in terms of mass. Consequently, water quality-based limitations as seen in the permit are expressed in terms of mass.

Toxicity Characteristics

In accordance with EPA's Region 6 Post-Third Round Toxics Strategy, permits issued to treatment works treating domestic wastewater with a flow (design or expected) greater than or equal to 1 MGD shall require biomonitoring at some frequency for the life of the permit or where available data show reasonable potential to cause lethality, the permit shall require a whole effluent toxicity (WET) limit (*Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards*, September 27, 2001 VERSION 4).

Whole effluent biomonitoring is the most direct measure of potential toxicity that incorporates the effects of synergism of the effluent components and receiving stream water quality characteristics. Therefore, Freshwater Chronic Biomonitoring is required as a condition of this permit to assess potential toxicity. LAC 33:IX.1121.B.3. provides for the use of biomonitoring to monitor the effluent for protection of State waters. The biomonitoring procedures stipulated as a condition of this permit are as follows:

On February 27, 2004, the City was issued a Consolidated Compliance Order & Notice of Potential Penalty, Enforcement Tracking #WE-CN-04-0279 ordering them to submit a Toxicity Reduction Evaluation (TRE) Action plan and schedule. As of this date, the TRE is ongoing and a toxicant has not been found. TRE Quarterly Progress Reports are being submitted, along with sampling and biomonitoring tests of the effluent which continues to cause intermittent lethal and sublethal failures to both species. The TRE end date is May 10, 2006. Based on the facility's previous and present effluent toxicity problems, a WET limit of 98% during the interim period, and 99% during the final period will be imposed in the permit.

The permittee shall submit the results of any biomonitoring testings performed in accordance with the LPDES Permit No. LA0036323, Part II, **Section E** for the organisms indicated below.

TOXICITY TESTS

Lethality (7-Day NOEC)

Ceriodaphnia dubia

Pimephales promelas

FREQUENCY

1/quarter

1/quarter

Dilution Series - The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. During the interim period, these additional concentrations shall be 31%, 42%, 55%, 74%, and 98%. The low-flow effluent concentration (critical low-flow dilution) is defined as 98% effluent which is the WET limit. During the final period, these additional concentrations shall be 31%, 42%, 56%, 74%, and 99%. The low-flow effluent concentration (critical low-flow dilution) is defined as 99% effluent which is the WET limit. The critical dilution is calculated on page 1 in Appendix B-1 attached to this fact sheet. Results of all dilutions shall be documented in a full report according to the test method publication mentioned in Part II **Section E** under Whole Effluent Toxicity. This full report shall be submitted to the Office of Environmental Compliance as contained in the Reporting Paragraph located in Part II **Section E** of the permit.

After May 10, 2006, the end date of the TRE, the permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity if a toxicant is found and/or if data shows actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.2903. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

X.

PREVIOUS PERMITS:

LPDES Permit No. LA0036323:	Issued:	March 1, 2001
	Effective:	April 1, 2001
	Expired:	March 31, 2006

Interim effluent limits beginning the effective date of the permit and lasting through three years from the effective date of the permit Design 4.0 MGD

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>		
	lbs./day	other units			
	Monthly	Monthly	Weekly	Measurement	Sample
	<u>Avg.</u>	<u>Avg.</u>	<u>Avg.</u>	<u>Frequency</u>	<u>Type</u>
Flow	---	Report	Report	Continuous	Record
CBOD ₅	334	10 mg/l	15 mg/l	2/week	6-hr. comp
TSS	500	15 mg/l	23 mg/l	2/week	6-hr. comp
Ammonia-Nitrogen	167	5 mg/l	10 mg/l	2/week	6-hr. comp
Fecal Coliform Colonies	N/A	200	400	2/week	Grab
Total Residual Chlorine	N/A	---	---	2/week	Grab
pH	---	6-9 Standard Units		2/week	Grab
	lbs./day	lbs/day			
	Monthly	Weekly		Measurement	Sample
	<u>Avg.</u>	<u>Avg.</u>		<u>Frequency</u>	<u>Type</u>
Mercury	0.0009	0.002		1/month	24-hr. comp
Zinc	Report	Report		1/month	24-hr. comp
		<u>30-Day Avg. Min.</u>	<u>7-Day Avg. Min.</u>	Measurement	Sample
Whole Effluent				<u>Frequency</u>	<u>Type</u>
Lethality (7-Day NOEC)		99%	99%		
Ceriodaphnia dubia		Report	Report	1/quarter	24-hr. comp.
Pimephales promelas		Report	Report	1/quarter	24-hr. comp.

Final effluent limits beginning three years from the effective date of the permit and lasting through the expiration date of the permit Design 4.0 MGD

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	lbs./day	other units			
	Monthly	Monthly	Weekly	Measurement	Sample
	<u>Avg.</u>	<u>Avg.</u>	<u>Avg.</u>	<u>Frequency</u>	<u>Type</u>
Flow	---	Report	Report	Continuous	Record
CBOD ₅	334	10 mg/l	15 mg/l	2/week	6-hr. comp
TSS	500	15 mg/l	23 mg/l	2/week	6-hr. comp
Ammonia-Nitrogen	167	5 mg/l	10 mg/l	2/week	6-hr. comp
Fecal Coliform Colonies	N/A	200	400	2/week	Grab
Total Residual Chlorine	N/A	---	---	2/week	Grab
pH	---	6-9 Standard Units		2/week	Grab
	lbs./day	lbs/day			
	Monthly	Weekly		Measurement	Sample
	<u>Avg.</u>	<u>Avg.</u>		<u>Frequency</u>	<u>Type</u>
Mercury	0.0009	0.002		1/month	24-hr. comp
Zinc	1.67	3.97		1/month	24-hr. comp
		<u>30-Day Avg. Min.</u>	<u>7-Day Avg. Min.</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Whole Effluent					
Lethality (7-Day NOEC)		99%	99%		
Ceriodaphnia dubia		Report	Report	1/quarter	24-hr. comp.
Pimephales promelas		Report	Report	1/quarter	24-hr. comp.

This permit contained pretreatment requirements.
This permit contained pollution prevention requirements.
This permit contained biomonitoring requirements.

XI. ENFORCEMENT AND SURVEILLANCE ACTIONS:

A) Inspections

A review of EDMS indicates the following inspections were performed during the period beginning **October 2003** and ending **October 2005** for this facility.

Date – December 14, 2004

Inspector(s) – Madelon Carter, LDEQ/Northeast Regional Office

Findings and/or Violations:

This inspection was conducted to determine this facility's compliance with the LAC 33:IX. Water Quality Regulations. During an inspection of this facility the following items were found:

1. The ammonia-nitrogen parameter was exceeded for the months and years of 11/03, 12/03, 01/04, 03/04, 04/04, and 05/04.
2. The TSS parameter was exceeded for the months and year of 03/04, 04/04, and 05/04.
3. The design capacity of 4 MGD was exceeded for the months and year of 03/04, 10/04, and 11/04.
4. Persistent effluent lethality has been exhibited to the Ceriodaphnia dubia and Pimephales promelas species at or below the Whole Effluent Toxicity (WET) limit of 99% effluent; whereas, the DMRs revealed lethal and for sublethal effects were exhibited to the test species for the months and years for 11/03, 12/03, 01/04, 02/04, 03/04 and 06/04.
5. There have been 24 unauthorized discharges since the last inspection on 11/04/03.
6. pH holding times could not be determined;whereas, the sample times are not being documented.

Date – November 4, 2003

Inspector(s) – Casey Head, LDEQ/Northeast Regional Office

Findings and/or Violations:

A compliance inspection was done to determine compliance with LPDES LA0036323 and the following was noted:

1. Since issuance of warning letter WE-L-03-0618, the facility has exceeded its permit limits for TSS- four times, TRC – once, and Ammonia-six times.
2. Since the last inspection, there has been 11 overflows out in the system.
3. There was a moderate amount of foam at the outfall.
4. There was some white solids in the discharge.
5. The facility has been failing part of its biomonitoring.
6. The facility has not been doing flow checks to ensure accurate flow measurement.

B) Compliance and/or Administrative Orders

A review of EDMS and TEMPO revealed the following enforcement actions(active) administered against this facility from the period beginning **October 2003** through **October 2005**:

LDEQ Issuance:

Docket # - WE-C-04-1026

Issued – November 24, 2004

Findings:

1. On or about April 5, 2003, a Settlement Agreement was finalized between the respondent and the Department. The settlement Agreement covered violations documented in CONSOLIDATED COMPLIANCE ORDERS & NOTICE OF POTENTIAL PENALTIES ENFORCEMENT TRACKING NOs. WE-CN-01-0074 and WE-CN-01-0074A. The Settlement Agreement required the respondent to pay \$51,000.00 to resolve the violations documented in the aforementioned enforcement actions and to complete upgrades and/or construction of its wastewater treatment facility by December 31, 2006. The respondent was issued COMPLIANCE ORDER WE-C-03-0327 on or about May 30, 2003. The relevant violation in the Compliance Order included exceedances of permit effluent limitations. The relevant requirement of the Compliance Order was to comply with interim limits as set forth in Appendix

A of the Order. The respondent was issued CONSOLIDATED COMPLIANCE ORDER & NOTICE OF POTENTIAL PENALTY WE-C-04-0279, on or about February 27, 2004. The relevant violations in the compliance Order included exceedances of permit effluent and interim effluent limitations, and violations of Whole Effluent Toxicity (WET) limit requirements. The relevant requirements of the Compliance Order was to comply with interim limits as set forth in COMPLIANCE ORDER WE-C-03-0327 and LPDES permit LA0036323.

2. A file review conducted by the Department on or about November 22, 2004, revealed the Monthly Average and Weekly Average excursions for Ammonia-Nitrogen and Whole Effluent Toxicity for the Months of February 2004 through June 2004.
3. Based upon quarterly reports submitted by the respondent as required in the Settlement Agreement, the respondent has spent approximately \$142, 554 on repairs and upgrades to the existing wastewater treatment facility since November 2003. Additionally, the respondent has paid approximately \$1.285 million in engineering design fees for design of the new wastewater treatment facility scheduled to be completed by December 31, 2006.

Order:

1. To immediately take, any and all steps necessary to meet and maintain compliance with LPDES permit LA0036323.
2. To be on notice, that the interim effluent limits as provided in COMPLIANCE ORDER WE-C-03-0327, are suspended upon receipt of this COMPLIANCE ORDER.
3. To submit to the Enforcement Division, within (30) days, a written report that includes a detailed description of the circumstances surrounding the cited violations and actions taken to achieve compliance with the Order portion of the Compliance Order.

Docket # - WE-L-04-1026

Issued - August 23, 2004

The letter informed the facility that in a file review conducted by the Louisiana Department of Environmental Quality on or about August 19, 2004, it was discovered that the following effluent measurements were above the authorized permit limits.

Date	Parameter	Permit Limit	Sample Value
2/04	Whole Effluent Toxicity Monthly Avg Min	99%	75%
	Whole Effluent Toxicity 7-Day Min	99%	75%
3/04	Whole Effluent Toxicity Monthly Avg Min	99%	75%
	Whole Effluent Toxicity Monthly Avg Min	99%	75%
	TSS Weekly Average	45 mg/l	46.5 mg/l
	Ammonia Monthly Average	10 mg/l	12.39 mg/l
4/04	Ammonia Weekly Average	15 mg/l	16.05 mg/l
	TSS Weekly Average	45 mg/l	53.8 mg/l
	Ammonia Monthly Average	10 mg/l	11.79 mg/l
	TSS Monthly Average	30 mg/l	53.8 mg/l
5/04	TSS Weekly Average	45 mg/l	84 mg/l
	Ammonia Monthly Average	10 mg/l	14.3 mg/l
	Ammonia Weekly Average	15 mg/l	16.2 mg/l
	Whole Effluent Toxicity Monthly Avg Min	99%	0%
6/04	Whole Effluent Toxicity 7-Day Min	99%	0%

The letter also informed the facility to review this information and submit any required reports. In addition, take any and all steps to ensure compliance with their LPDES permit and all environmental regulations at their facility.

Docket # - WE-CN-04-0279

Issued - February 27, 2004

Findings:

4. On or about April 5, 2003, a Settlement Agreement was finalized between the respondent and the Department. The settlement Agreement covered violations documented in Consolidated COMPLIANCE ORDERS & NOTICE OF POTENTIAL PENALTIES ENFORCEMENT TRACKING NOs. WE-CN-01-0074 and WE-CN-01-0074A. The Settlement Agreement

required the respondent to pay \$51,000.00 to resolve the violations documented in the aforementioned enforcement actions and to complete upgrades and/or construction of its wastewater treatment facility by December 31, 2006. On or about May 16, 2003, the respondent requested interim limits for the duration of upgrades and/or construction of the wastewater treatment facility.

2. The respondent was issued COMPLIANCE ORDER WE-C-03-0327 on or about May 30, 2003. the relevant violation of the Compliance Order was to comply with interim limits as set forth in Appendix A of the Order.
3. An inspection conducted by the Department on or about November 4, 2003, revealed that the respondent did cause or allow the unauthorized discharge of untreated wastewater to waters of the state. Specifically, eleven sewer overflows have occurred since the last inspection on December 23, 2002.
4. An inspection conducted by the Department on or about November 4, 2003, revealed that the respondent failed to perform flow checks to ensure accurate flow measurements as specified in the permit.
5. An inspection conducted by the Department on or about November 4, 2003, revealed the discharge of inadequately treated wastewater into waters of the state. Specifically, there was a moderate amount of foam at the outfall and white solids in the discharge.
6. On or about January 15, 2004, the respondent did submit to the Department a written response to the areas of concern noted during the inspection of November 2003.
7. A file review conducted by the Department on or about February 23, 2004, revealed a number of effluent violations from May 2003 through January 2004 consisting of 7 TSS violations, 2 CBOD₅ violations, and 19 Ammonia-Nitrogen violations. Each effluent excursion during the monitoring period of May 2003 is in violation of LPDES permit LA0036323 (Part I, and Part III, Section A.2), La. R.S. 30:2076 9A)(1)(b), La. R.S. 30:2076 (A)(3), LAC 33:IX.501.D, and LAC 33:IX.2355.A.
8. A file review conducted by the Department on or about February 23, 2004, revealed persistent effluent lethality has been exhibited to either one or both species, the Ceriodaphnia dubia and Pimephales promelas at or below the Whole Effluent Toxicity (WET) limit of 99% effluent every month from April 2002 through January 2004.
9. Based upon the quarterly reports submitted by the respondent as required in the Settlement Agreement reference in paragraph II above, the respondent has completed the following upgrades: repairs to the U.S. Hwy. 80 E force main, and rehabilitation of clarifiers.

Order:

1. To immediately take, any and all steps necessary to meet and maintain compliance with LPDES permit LA0036323 and the interim limitations set forth in Compliance Order WE-C-03-0327.
2. The submit to the Permits Division and a copy to the Enforcement Division, within (30) days, a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule. The TRE was to include measures that will be implemented to identify and reduce or eliminate toxicity in the effluent.
3. to submit to the Enforcement Division, within (30) days, a written report that includes a detailed description of the circumstances surrounding the cited violations and actions taken or to be taken to achieve compliance with the Order portion of the Compliance Order.

Penalty:

1. Pursuant to LA.R.S. 30:2050.3(B), the respondent was notified that issuance of a penalty assessment was being considered for the violation(s) described in the Order. The respondent was allowed to submit written comments regarding the violations. The comments had to be submitted within ten (10) days of receipt of the notice.
2. The respondent was to forward the most current annual gross revenue statement along with a statement of the monetary benefits of noncompliance for the cited violation(s) within (10) ten days and include with the statement, the method utilized to arrive at the sum.

EPA Issuance: None

C) **DMR Review**

A review of the discharge monitoring reports for the period beginning **July 2003** through **July 2005** has revealed the following violations:

<u>Effluent Characteristic</u>	<u>Number of Violations</u>
CBOD ₅ Mon. Avg. - (concentration)	3
CBOD ₅ Weekly Avg. - (concentration)	4
CBOD ₅ Avg. - (loadings)	0
TSS Mon. Avg. - (concentration)	4
TSS Weekly Avg. - (concentration)	5
TSS Avg. - (loadings)	0
Ammonia Mon. Avg. (concentration)	10
Ammonia Weekly Avg. (concentration)	10
Ammonia Avg. (loadings)	0
Fecal Coliform Average	0
Fecal Coliform Maximum	0
TRC	1
Total Mercury Monthly Avg. - (loadings)	0
Total Mercury Daily Maximum - (loadings)	0
Biomonitoring	
<i>Ceriodaphnia dubia</i>	13 lethal and 22 sub-lethal
<i>Pimephales promelas</i>	16 lethal and 25 sub-lethal

A detailed DMR report is attached. See also, Biomonitoring frequency recommendation and rationale.

XII. **ADDITIONAL INFORMATION:**

Total Mercury was listed in the previous permit with Daily Average mass limits of 0.0009 lbs/day and Daily Maximum mass limits of 0.002 lbs/day monitored 1/month. The results of the Discharge Monitoring Report (DMR) review of the data submitted for the period April 2001 through August 2005 shows that values other than 0 were reported three times during this period (See attachment: Mercury Data). A value of 0 has been reported consistently for the period February 2003 through August 2005. Also, a review of the priority pollutant scan submitted with the application on October 3, 2005 revealed non detect for Mercury. Based upon this information, it is the Best Professional Judgement of the permit writer that mercury is not present in this facility's effluent, and the three incidents are anomalies, therefore, the limit for Total Mercury is being removed from this permit.

The permittee is upgrading the existing wastewater treatment plant from 4 MGD to 6 MGD. The upgrade will include a new headworks, nutrient removal (anoxic basin), complete mix automated sludge aeration basin, filtration, and ultraviolet disinfection. In order to complete this upgrade, the permittee will need time for construction.

The permittee submitted the following construction schedule:

ACTIVITY	DATE
Begin Construction	March 1, 2006
End Construction	December 31, 2007
Achieve Final Effluent Limitations and Monitoring Requirements	March 1, 2008

Final effluent loadings (i.e. lbs/day) have been established based upon the permit limit concentrations and the current design capacity flow of 4.0 MGD and the future design capacity flow 6.0 MGD. Effluent loadings are calculated as shown in the following example:

$$\text{CBOD}_5 = 8.34 \times 4 \times 10 \text{ mg/l} = 334 \text{ lbs/day}$$

$$\text{CBOD}_5 = 8.34 \times 6 \times 10 \text{ mg/l} = 500 \text{ lbs/day}$$

At present, the **Monitoring Requirements, Sample Types, and Frequency of Sampling** for facilities with flows of 1 to 5 MGD are 6-hour composite at 2/week. After completion of the upgrade, the monitoring requirements, sample types, and frequency of sampling will change. For facilities with flows of 5 to 10 MGD, the monitoring requirements, sample type and frequency of sampling will increase to 12-hour composite at 5/week.

<u>Effluent Characteristics</u>	<u>Monitoring Requirements</u>	
	<u>Measurement</u>	<u>Sample</u>
	<u>Frequency</u>	<u>Type</u>
Flow	Continuous	Recorder
CBOD ₅	2/week	6-hr. composite
Total Suspended Solids	2/week	6-hr. composite
Fecal Coliform Bacteria	2/week	6-hr. composite
Ammonia-Nitrogen	2/week	6-hr. composite
TDS	1/quarter	Grab
Sulfates	1/quarter	Grab
Total Residual Chlorine	2/week	Grab
Biomonitoring		
<u>Ceriodaphnia dubia</u>	1/quarter	24-hr. composite
<u>Pimephales promelas</u>	1/quarter	24-hr. composite
pH	2/week	Grab
Total Zinc	1/month	24-hr. composite

PRETREATMENT REQUIREMENTS

Based upon consultation with LDEQ pretreatment personnel, it is recommended that standard pretreatment requirements language be included in the permit during the interim period. However, in the final period and after completion of the upgrade, it is recommended that Option 3 pretreatment language be included in the permit. *Option 3 pretreatment language requires the permittee to submit the results of an updated industrial user survey and thereby begin developing a pretreatment program. This is based upon the design capacity of the facility and information listed in Attachment 1(Industrial Waste Discharger Into Sanitary System) of the LPDES renewal application along with the Directory of Louisiana Manufacturers(2005) that lists industrial dischargers that discharge into the City of Ruston's collection system.*

Pollution Prevention Requirements:

The permittee shall institute or continue programs directed towards pollution prevention. The permittee shall institute or continue programs to improve the operating efficiency and extend the useful life of the facility. The permittee will complete an annual Environmental Audit Report each year for the life of this permit according to the schedule below. The permittee will accomplish this requirement by completing an Environmental Audit Form which has been attached to the permit. Please make additional copies to be utilized for each year of this permit.

The audit evaluation period is as follows:

Audit Period Begins	Audit Period Ends	Audit Report Completion Date
Effective Date of Permit	12 Months from Audit Period Beginning Date	3 Months from Audit Period Ending Date

Environmental Impact Questionnaire:

Applicant Comments/Responses (verbatim from applicant)

1. Have the potential and real adverse effects of the proposed facility been avoided to the maximum extent possible?

(Response) N/A

2. Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?

(Response) N/A

3. Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing nonenvironmental benefits?

(Response) N/A

4. Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing nonenvironmental benefits?

(Response) N/A

5. Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing nonenvironmental benefits?

(Response) N/A

XIII. TENTATIVE DETERMINATION:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in this Fact Sheet.

XIV. REFERENCES:

Louisiana Water Quality Management Plan, Vol. 8, Appendix A "Areawide Effluent Limitations Policy", Louisiana Department of Environmental Quality, 2005.

Louisiana Water Quality Management Plan, Vol. 5, Part B, "Water Quality Inventory", Louisiana Department of Environmental Quality, 2002 and 2004.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Chapter 11 - "Louisiana Surface Water Quality Standards", Louisiana Department of Environmental Quality, 2005.

REFERENCES (continued):

LA 2004 Integrated Report with FINAL EPA Additions, August 17, 2005.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Chapter 23 - "The LPDES Program", Louisiana Department of Environmental Quality, 2005.

Low-Flow Characteristics of Louisiana Streams, Water Resources Technical Report No. 22, United States Department of the Interior, Geological Survey, 1980.

Index to Surface Water Data in Louisiana, Water Resources Basic Records Report No. 17, United States Department of the Interior, Geological Survey, 1989.

LPDES Permit Application to Discharge Wastewater, City of Ruston, Northside Wastewater Treatment Facility, October 3, 2005.

BASIN: General Information on Total Suspended Solids, City of Boulder/USGS Water Quality Monitoring, Sheila Murphy, Research Analyst, last update June 15, 2002, <http://www.bcn.boulder.co.us/basin/data/FECAL/info/TSS.html>.

How Pure Is Your Water? 1997 - 2000 Sunstone Industries, last modified January 13, 2005, Sunstone Herbals, <http://sunstoneherbals.com/tds3.htm>.

Sulfates, Lenntech, <http://www.lenntech.com/sulfates.htm>.

Sulfates (SO_4^{2-}), <http://family.agnesirwin.org/earth/EarthWeb10/Chem1d/WhitneyR/sulfates.htm>.

Water Quality Standards-Sulfates, http://www.aldeaglobal.com.ar/agua/wqsi_so4.htm.